

Amendment to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application.

1. (Currently amended) An ~~improved~~ electrolyte for the electrolysis of alumina (Al_2O_3), the electrolyte comprising a mixture of aluminum fluoride (AlF_3) ~~and~~ potassium fluoride (KF), oxygen-containing ions, and NaF ~~, wherein the NaF comprises no more than 2 weight percent of the electrolyte.~~

2. (Currently Amended) The electrolyte recited in claim 1 wherein the potassium fluoride (KF) to aluminum fluoride (AlF_3) molar ratio ranges from about 1.0 to 1.5.

3. (Previously Presented) The electrolyte recited in claim 1, the electrolyte further comprising from about 4 to 6 wt. % of aluminum oxide (alumina/ Al_2O_3).

4. (Currently Amended) The electrolyte as recited in claim 3 ~~4~~ wherein the oxygen-containing ions are Al_2OF_6 and $\text{Al}_2\text{O}_2\text{F}_4^{-2}$ and the concentrations of the electrolyte components ions remain relatively constant during hydrolysis.

5. (Cancel)

6. (Currently Amended) The electrolyte as recited in claim 3 wherein the electrolyte remains is a liquid between 600 and 1000 °C. during electrolysis.

Claims 7-20 (Canceled)

21. (New) A liquid phase electrolyte at between 600 and 1000 °C, the electrolyte comprising potassium fluoride, aluminum fluoride, and less than two weight percent of NaF.

22. (New) The electrolyte as recited in claim 21 further comprising from about 4 to 6 wt. % of aluminum oxide.

23. (New) The electrolyte as recited in claim 22 further comprising Al_2OF_6 and $\text{Al}_2\text{O}_2\text{F}_4^{-2}$.

24. (New) An electrolyte consisting of potassium fluoride and aluminum fluoride in a 1.3 molar weight ratio, between about 4 to 6 wt% aluminum oxide, and less than two weight percent NaF.